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APPLICATION NO.	FILING DATE	FIRST NAME INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09 847,165	05/01/2001	David A. Atkinson	LT-PI 355	5640

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EXAMINER

GURZO, PAUL M

ART UNIT

PAPER NUMBER

2881

DATE MAILED: 01/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/847,165

Applicant(s)

ATKINSON ET AL.

Examiner

Paul Gurzo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 01 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

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DETAILED ACTION***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 136 and 144. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 5, 15, 20-22, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (4,647,772), and further in view of Wesley (4,458,153).

Regarding claims 1, 15, 20-22, 31, and 32, Lewis et al. teach a spectrometry analyzer source comprising an electrically conductive conduit (27), with a discharge end, to receive the sample and an electrically conductive reference device (45) positioned proximate the discharge end of the conduit to allow an electrical potential to be established (col. 4, line 21 - col. 7, line 17 and Fig. 1 and 5). They teach that the mass analyzer employed in the spectrometer may be of any suitable type (col. 5, lines 35-37). They teach strongly heating the nozzle so that vaporization and ionization of at least some of the sample takes place (col. 6, lines 61-64). While it is implied that this happens simultaneously, they do not explicitly state this. However,

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Wesley states that a spark gap across the electrodes releases a large quantity of energy in a small area that instantaneously vaporizes and ionizes everything in the arc. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Lewis et al. so that this happens simultaneously to increase efficiency.

Regarding claims 4 and 5, Wesley et al. teach a field generating means disposed adjacent a nonconductive portion of the flow conduit (13), and Fig. 1 shows the claimed opening (col. 3, lines 48-51 and Fig.1).

Claims 2 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (4,647,772) in view of Wesley (4,458,153), and further in view of Kamo et al. (4,028,617).

While it is known that proper working order will only be achieved through accurate placement of the reference device, the above-applied art is silent to the claimed Paschen distance. However, Kamo et al. teach that the spark discharge that arises between the gap of the two electrodes conforms with Paschen's Law (col. 1, lines 27-36). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to place the reference device at a distance greater than Paschen's distance so that the proper potential can be maintained.

Claims 3, 12, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (4,647,772) in view of Wesley (4,458,153), and further in view of French et al. (5,345,079).

The above-applied prior art does not explicitly teach the initiation of a corona discharge, but it will occur based on increasing the potential between the electrodes. Further, French et al. teach that additional ionization can be produced using a corona discharge from a needle (214)

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(col. 13, lines 45-54 and Fig. 18). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to initiate a corona discharge because this will facilitate the vaporization and ionization to produce the analyte ions.

Claim 6 and 33 - 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (4,647,772) in view of Wesley (4,458,153), and further in view of Liang et al. (5,081,397).

Regarding claim 6, the above-applied art does not state the claimed metal, but Liang et al. teach the use of stainless steel electrodes (12) (col. 6, lines 65-66, and Fig.1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use stainless steel to reduce undesired effects of arcing.

Regarding claims 23 - 26, they are obvious matters of design choice in view of the prior art and do not give rise to any new or unexpected results. As such, they are not given patentable weight.

Regarding claims 33 - 43, the above-applied art teaches the limitations as described above, and Liang et al. teach that the potential between the electrodes is often high enough to cause arcing (col. 7, lines 23-26), and it is obvious that this arcing can be continuous.

Claims 7-11, 13, 14, 18, 19, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lewis et al. (4,647,772) in view of Wesley (4,458,153), and further in view of Spangler (6,407,382).

Regarding claims 7-10, 18, and 19, Lewis et al. teach the use of a potential generating means capable of maintaining the desired potential of the electrodes and the polarity is typically between 50-500 volts (col. 10, lines 18-24), but they do not teach an electrical circuit to achieve

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these results. However, Spangler teaches a solid state circuitry for operation as well as a transistor switch to adjust the potential. The discharge is powered by a high voltage power supply (Abstract and col. 7, line 59 - col. 8, line 10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an electrical circuit because it achieves much the same result as the prior art and is merely a design choice.

Regarding claims 11, 13, and 14, Spangler teaches that the cathode is connected to the low side of the potential, which serves as a floating ground (col. 4, lines 17-20). Spangler also teaches that the electrodes may be rings or grids (col. 8, lines 34-36).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Corrigan et al. (5,465,607) teach an explosive screening system with vaporizing and sampling means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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PMG
January 6, 2003

[Handwritten signature]
JOHN R. TEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1000